

Observations by USDA-APHIS scientists who visited soybean grain handling facilities in New Orleans, January 7, 2004, and in Ponta Grossa, Paranagua and Santos, Brazil, February 10-12, 2004

General Questions Addressed

Question	US	Brazil
1. How long do soybeans stay in the field during and after senescence?	The period of time from the beginning of senescence (when foliage begins to turn yellow) until harvest is usually 7-14 days.	The consensus was that soybeans remained in the field at least 7-14 days after the beginning of senescence, similar to the practices in the USA.
2. What is the minimal length of time between harvest and export?	<p>In certain cases, soybeans harvested near an export elevator could be delivered to an export elevator and loaded on a ship within a day. Usually, however, soybeans are harvested and moved to a country/local elevator or a river terminal elevator which arranges transport to the export elevator as needed. There is also considerable on-farm storage.</p> <p>At export elevators, soybeans are not stored for any appreciable time and are frequently off-loaded from barges and loaded on to ships without being stored in the elevator.</p> <p>Barge transport is the principle means (approximately 90%) for moving beans to the New Orleans export facilities which handle approximately 65% of the US soybean exports. Barge transport from St. Louis to New Orleans is approximately 7 days.</p>	<p>In Brazil, soybeans are not moved directly from the field to a grain export facility. Harvested grain moves from the field to a grain handling facility in the countryside. The facility in Ponta Grossa was collocated with a processing plant. Soybeans are generally moved by truck from the field to the first grain handling facility and also from this facility to the grain export facility. There is some rail movement of soybeans from the grain handling facility to the export facility only when both facilities are within the same state. Each state developed its own rail lines; consequently the gauge of the track is not uniform throughout the country. Grain destined to the Port of Santos can be trucked as far as 2,000 km.</p> <p>Grain entering the first grain handling facility is cleaned to 1% or less foreign material and dried to less than 13% moisture content before being transferred to their bulk storage warehouses. This process can take one to several days depending on the amount of grain received and the</p>

		moisture of the grain.
3. Are soybeans dried before or after entering the export facilities?	Drying of soybeans is not a common practice in the US. US soybeans are usually harvested with a moisture content ranging from 11-14%, and consequently do not require drying. Drying facilities are present on farm and at local elevators in major production areas but are usually used for corn. Desired moisture content for soybeans is 11-13%; moisture content in excess of 14% is subject to significant discounts to the grower. Export elevators have very limited drying capabilities and seldom dry soybeans. However, blending of soybean lots does occur to reduce overall moisture content.	Soybeans are not cleaned, dried, or blended at the export facilities. Also soybeans are not blended to meet a specified grade for sale anywhere in the Brazilian grain handling system, they use one grade standard. All trucks and railcars entering the export facility are sampled and tested by Ministry certified entities to ensure that they meet the minimum standard grade, which is less than 14% moisture and 1% or less foreign material. Trucks and railcars that do not meet this standard are not allowed to discharge their soybeans and are sent back to origin. All soybeans are sampled and tested on the trucks as they enter the first grain handling facility. Grain that is above 13% moisture content (MC) is dried before being transferred to storage bins. It appeared that the MC of soybeans was generally higher in Brazil (as high as 22%) than the US. Higher MC soybeans were put in holding bins after drying to allow the beans to equilibrate (the interior of the beans will not dry as quickly as the exterior). After a day or two the MC was again measured and the beans dried again as necessary. Urediniospore viability will likely be affected by the temperature and duration of the drying process.
4. Are soybeans cleaned prior to or after transport to export	Soybeans are cleaned only when the presence of foreign material (FM) exceeds requirements for the desired grade. Most soybeans produced in the US are harvested at Grade 1 with respect to FM (1% or less foreign material by weight). Grain with high FM (>2%) is usually blended, rather than cleaned, to lower	All soybeans are cleaned at the first grain handling facility. The beans are cleaned to 1% or less foreign material (FM), which is the standard maintained throughout the system. If Brazilian soybeans were evaluated using the FGIS system, they would meet the #1 grade for FM, however, some of their soybeans would

<p>elevator?</p>	<p>FM content. Export elevators have very limited cleaning capabilities and seldom clean soybeans.</p> <p>Leaf tissue represents a minor component of FM. Apparently, breakage during handling and transport (approx. 0.5%) and seed of other species are the principal components, followed by pod, stem and other plant tissue.</p>	<p>grade at #2 because of low test weights. Graded samples viewed at the port of Santos showed that % FM ranged from 0.16 to 0.92%, with the majority of samples between 0.3 and 0.6% FM. Trucks and railcars are sampled and tested by Ministry certified testing entities before entering the export facility. If the FM is above 1%, or does not meet other components of the standard, the vehicle is not allowed to discharge soybeans and is returned to origin.</p>
<p>5. Are soybeans stored for extended periods of time prior to export?</p>	<p>In the US, soybeans are exported year around, however the major export period is from October through March. Therefore, most beans are sold within 6 months of harvest.</p>	<p>Similar to the US, the export facilities do not store soybeans, they warehouse beans for the efficient loading of ships. In the past, Brazil had limited soybean storage capacity. Recently the storage capacity has increased and is continuing to increase with the expectation of extending their March to September marketing window. The longer term storage facilities that we observed were still large bulk storage buildings. They had the capability of regulating temperature within the stored beans by forcing air through floor vents. We were told that farmers were investing in on farm storage bins, as well as cleaning and drying equipment.</p>